

DOES HOUSING ALLOWANCES RAISE RENTS?

- A literature review from Finnish rental market

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Abstract

This paper studies the impact of housing allowances on rents. I answer on questions "do housing allowance recipients pay higher rents?" and "do housing allowance increase overall rent levels?". The paper is a literature review focusing on the most notable studies of the subject and researches the questions from the standpoint of the Finnish rental market. The topic is difficult to research due to the econometric problems, mostly of simultaneous causality and omitted variable bias. That, among other reasons, causes the results to contradict. Kangasharju (2003 & 2010) finds that housing allowance recipients pay roughly 12% or 60-70% higher rents, respectively. Virén (2013) concludes that one-third of housing allowances to shift overall prices. Lastly, Eerola & Lyytikäinen (2019) finds no evidence of higher rent for housing allowance recipients. Foreign studies seem to be as contradictory. I conclude in this paper due to the setting, methods, and high robustness that Eerola & Lyytikäinen's (2019) result is the most plausible. I also conclude that the effect on overall rents is not researched enough to quantify the impact, but it is most likely positive.

Keywords Housing allowance, demand subsidy, rents

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1. Introduction

We often study the incidence of taxation, and the significant question is how the tax affects the taxable or how the tax distorts the market. Nevertheless, to understand the effectiveness of taxation, we should also focus on where the tax money is spent. Therefore, we should give the same importance to subsidies and allowances. A sound housing allowance system is described as effective and efficient, meaning the incidence of the allowance is where it is supposed to be, and it is organized cost-efficiently (Antikainen et al. 2017). This paper researches the question of incidence: Does housing allowances raise rents? I look at the question from two aspects: Do housing allowance recipients pay higher rent and do housing allowance increase overall rents.

The social insurance institution of Finland (KELA) paid benefits for almost 14,9 billion euros in 2018. Direct housing allowances were given over 2,1 billion euros that year. (KELA 2019A). Housing allowance (from this point forward HA) plays a remarkable role in Finnish society. At the end of 2018, it was allowed for 850 000 recipients, which means that over 15% of the Finnish population earned HA (KELA 2019B). With such a remarkable impact on Finnish housing, it is essential to understand if the HA system fulfills its' purpose. HA is a part of the Finnish housing policy. The primary purpose of HA is to ensure an adequate standard of housing and release housing costs for other consumption for low-income citizens (Jauhiainen et al. 2019).

The research on this subject is relatively small. This paper focuses majorly on econometric studies conducted in Finland about the Finnish rental market and HA scheme. The main sources are by Kangasharju, A. (2003) "maksako asumistuen saaja muita korkeampaa vuokraa?". A study made for *the Finnish Government Institute for Economic Research (VATT)*. I also use a later study by Kangasharju (2010): "Housing Allowance and the Rent of Low-income Households" published in *Scandinavian Journal of Economics*. In addition to these, I use Virén M. (2013): "Is the housing allowance shifted to rental prices?" for *Empirical Economics* and finally, I utilize the work by Eerola, E. and Lyytikäinen, T. (2019): "Housing allowance and rents: Evidence from a stepwise subsidy scheme", for VATT.

Kangasharju (2003) finds the housing allowance recipients to pay 11,5–12,2% higher rent, and later Kangasharju (2010) states that one additional euro of HA leads to 60–70 cents higher rent for the recipient. Virén (2013) results in one-third of HA to shift into overall rent prices. The latest results from Eerola & Lyytikäinen (2019) suggest that HA recipients do not pay remarkably higher rents than non-recipients. International studies' results are as contradictory.

The results depend highly on the methods, models, and assumptions used in the research. The simultaneous causality of HA and rents make the research question challenging to study and leads the researchers to sophisticated statistical methods. The results should be interpreted cautiously. I conclude in this paper that Eerola & Lyytikäinen (2019) provide the best empirical methods, setting, modeling, and robustness. Also, their results are converging with some recent foreign studies (Brewer et al. 2019; Eriksen & Ross, 2015). Consequently, I argue that HA recipients do not pay remarkably higher rents.

For the question of overall rent prices and housing allowance, I conclude that we do not have enough evidence to point out the size of the impact. The impact is most likely positive, as theory and current evidence suggest (Susin 2002. Virén 2013 et cetera), but the HA scheme is only a part of the rental market and therefore, might have insignificant or little impact on rent prices.

The paper proceeds as follows. After the introduction, I present the institutional background for Finnish studies. Starting from the Finnish rental market and then proceeding to explain the Finnish HA scheme. The third chapter addresses from a theoretical point of view why HA would increase rents. The fourth chapter first introduces international studies and then focuses on Finnish studies and explains their results. After this, I conclude the paper.

2. Finnish rental market and Housing allowance scheme

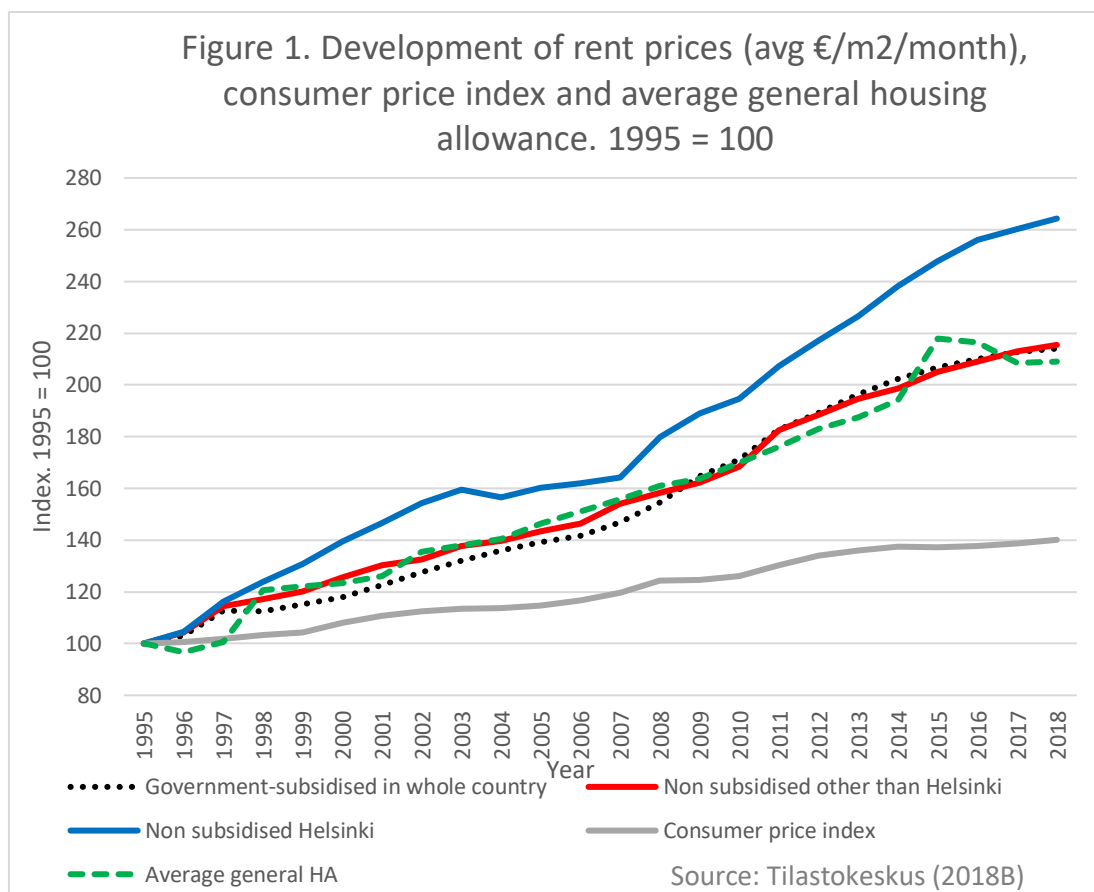
2.1 Finnish rental market

This paper studies demand-side subsidies. One must note that in Finland and most developed countries, the government provides housing support for the supply side. A major part of Finnish rental housing is supplied by ARA, the Housing Finance and Development Centre of Finland. ARA implements the social housing policy. Approximately one million apartments have been built using ARA construction since its founding in 1949. In 2016 878 000 households lived in rental dwellings, of which 317 000 were ARA dwellings (tilastokeskus 2017). The rent is based on the actual costs of construction and maintenance and is not based on market factors. It is necessary to keep in mind that ARA dwellings do affect the Finnish housing market since they are cheaper than their market counterparts. Due to the complicated nature of the subject, I only look at the demand-side of the housing support, yet one must keep in mind the supply-side factors.

Characteristics of Finnish housing trends are living alone, urbanization, and living downtown. According to Terämä et al. (2018), over a million persons live alone. Persons living alone often have a more difficult financial situation, and housing costs per tenant is higher. Therefore, they are the biggest group earning a housing allowance (See figure 2.). The development of living alone is similar to other Nordic countries (Terämä et al. 2018). Urbanization and living downtown often focus on areas that are inelastic in supply (Oikarinen, Peltola, Valtonen 2014), which causes the prices to rise. In some areas, Finnish housing market pricing is above the perfect competition equilibrium because the supply of housing cannot respond to the high demand. In the chapter, 3 I look how HA would response to inelastic supply.

In Finland, the private sector has no restriction on rental prices, although unreasonable price rises in inhabited dwellings are restricted. The rental pricing is negotiated between tenant and the property owner, although they often use third-party services to find each other. The Finnish law does not allow discriminating prices between tenants based on their characteristics. The yearly price changes in the rental price are

often attached to the cost-of-living index. Figure 1. shows the development of indexed rent prices, consumer prices, and housing allowance. Helsinki indicates the Greater Helsinki area. Government-subsidised means ARA-housing. The rental housing prices have increased substantially more than the consumer price index. Also, the figure shows how the Greater Helsinki area has encountered higher price rises than other areas.



2.2 Housing allowance scheme

To understand and analyze the economic effects of housing allowance, we need to state the main reason why these are paid and then analyze is the goal achieved from the economic point of view. Having an apartment is often thought of as a human right. As UN's declaration of universal human rights states:

*“Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, **housing** and medical*

care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.”

With this being said, one goal of HAs is to provide a standard level of housing for low-income people (Jauhiainen et al. 2019). The other goal is to shift the money used in the housing to other consumption, which increases the welfare of the recipient (Soininvaara, 2018). Hence, the goal of HA is to increase the wellbeing of the recipients. Not the property owners' wellbeing. Also, as a part of the Finnish housing policy, HA has other social purposes, such as reducing segregation.

Different types of HAs are paid by KELA, depending on the characteristics of the recipient. Most notable of HAs is the general housing allowance, which has grown rapidly in the past twenty years (see figure 2). Other HA types are housing allowance for pensioners, Housing supplement for students, and housing assistance for conscripts' families. On top of these, we can consider income support as a part of the housing allowance, since HA is not 100% of the housing price. With the aid of income support, one can have their whole rent paid by the public sector.

Figure 2. shows the development of HA recipients in the 2000s. As one can see, the most significant demographic group of HA recipients are those who live alone. In the past two decades, the Finnish population has moved into solo and couple housing more. Solo housing has grown 1-3% yearly (Tilastokeskus 2018C). Most of the general HA recipients are aged 15-29. The spike in the figure in the year 2017 is mostly because students were shifted from the 'housing support to students' to the general housing allowance. According to Soininvaara O. (2018), HAs paid have doubled since 2006 because a significant portion of the "baby boomers" has reached pension age, high unemployment, and structural changes in the HA system in 2015.

Receiving HA is mostly a momentary situation in one's life. Figure 3 show the portion of HA recipients staying and exiting the system during years 2013 to 2017. Pensioners seem to earn HA for the longest periods and students tend to exit quickly.

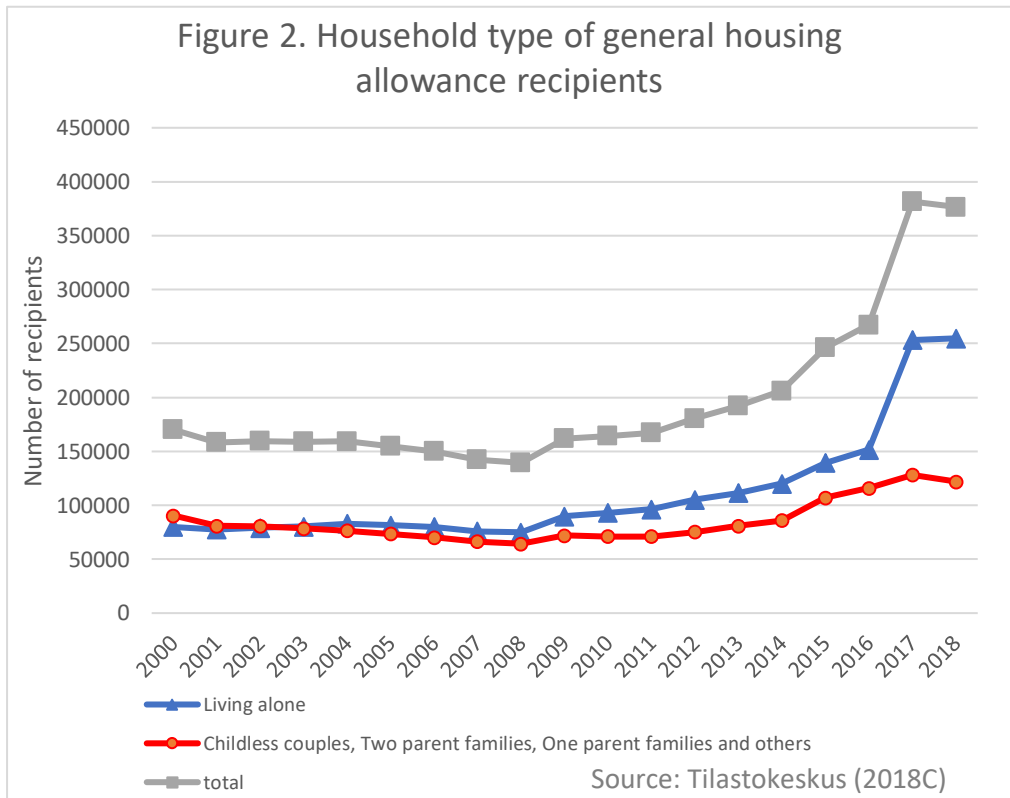
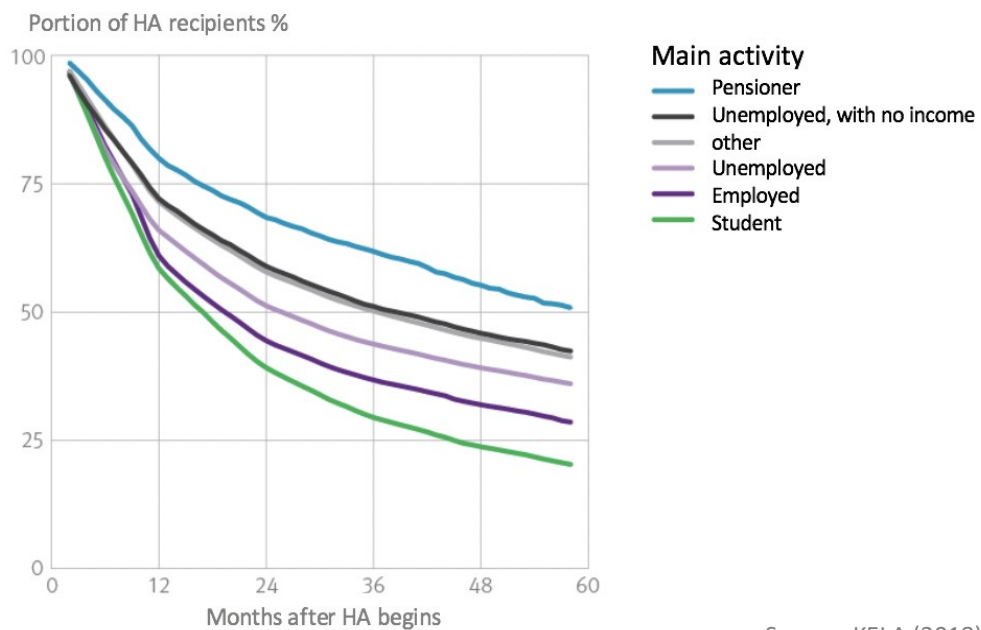


Figure 3. The portion of HA recipients earning HA during 2013–2017



The Finnish literature on this subject and the ones used as a reference in this paper covers data from the years 1990 to 2013. The studies focus on general HA. During this period, general HA was determined by rent per square meter, floor area of the dwelling, construction, or major renovation year, and location of the building. In addition to those, tenant characteristics would determine the general HA with variables as pre-tax Income and household size. As we later learn, Eerola & Lyytikäinen (2019) ingeniously exploit the stepwise nature of the HA generosity and floor area variable.

In 2015 the general HA faced a major renovation. The system was simplified, and the HA is determined by housing costs (rent, water, heating, and electricity), the number of adults and children, and their monthly income and municipality of the dwelling. A maximum of 80% of the accepted rental costs is paid. For example, in 2019, the highest accepted rental cost is 516 euros in Helsinki 80 percent of it would be paid as a HA giving the tenant benefit of 412,8 euros. The system now allows tenants to choose their housing more freely, without the characteristics of the house affecting their HA.

3. Theory of housing allowances affecting rental prices

To understand the research question, 'Does housing allowance raise rents?', the effect should be understood from the theoretical point of view. This section focuses on explaining why the HA would raise rents and, on the other hand, what could limit the impact.

Starting from the simplest model of demand and supply, we can think of HA as an income increase for low-income recipients. In that case, income increase should shift the demand curve of the recipients rightwards. Assuming that the income elasticity of rental housing demand is positive, this will cause the consumption of housing to be higher, and the price should rise, depending on the elasticity of supply. This model is similar to Susin (2002).

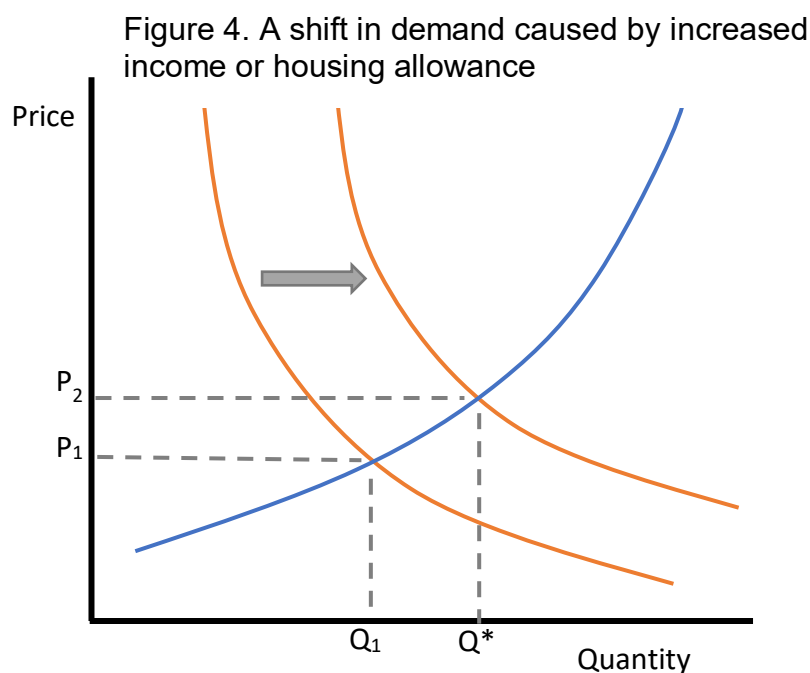


Figure 4. shows how HA affects the recipients. Note that this does not show the whole market reaction. The new equilibrium is spot Q^* . The HA recipients should increase their housing consumption, but some of it could lead to price raises, which, on the other hand, would increase the income of landlords. This common problem where the legal object does not necessarily face the full effect of the intervention can be seen in many

different situations, where the government intervenes in markets — for example, the incidence of taxation.

In this model, the effect of HA on price depends on 1, income elasticity of rental housing demand, which is not a problem since one purpose of the HA is to increase the housing consumption of low-income people. And, the effect also depends on 2, the price elasticity of supply of rental houses. The price elasticity of supply can be seen inelastic in the short run or even in the long run, especially in big cities (see Oikarinen, Peltola, Valtonen 2014).

If this theoretical point of view indeed is valid, it still does not necessarily mean price raises in the overall rental housing market. The weight of HA recipients in the whole market might be small enough not to create price raises for those who do not earn HA. If so, we need to think of two separate effects of HA on rental pricing: Does the HA raise prices for the HA recipients only, or does it also affect those who do not earn HA? In other words, affect the market overall? If the competition were perfect, the rent for HA recipients would be the same as for non-recipients. Some studies focus on the question if the 'law of one price' applies. If it does not, then HA recipients and non-recipients could face different prices on rental dwellings. As Kangasharju (2003 & 2010) studies, there could be one market for HA recipients and one for non-recipients, if HA recipients pay a higher price for the same dwelling. On the other hand, Virén (2013) concludes that the Finnish rental market has "one price", mostly because the law forbids discrimination, and landlords are not able to know the source of their tenant's income.

Yet another problem with this model is that it does not consider differences in institutional systems. If we think that HA pays the whole rent in full, let us say up to 1000 euros. Then the recipients would have the incentive to have a dwelling, which costs 1000 euros. This could rather straightforwardly raise prices since there would be no point in renting an apartment for a lesser cost. Soininvaara (2018) argues that this type of case is with income support, as it pays 100% of the rent and allows no incentive to reduce rental costs. However, Eerola, Lyytikäinen, Saarimaa & Öberg (2019) find

that income support does not create a lower limit to rents and that income support recipients may increase their rents, although it might be through a higher quality of housing.

Gladly, in most situations, the rent is not paid fully. Most HA systems pay recipients less than the cost of the rent for the tenant. The Finnish general HA gives a maximum of 80% of the rental costs for the tenant. There is also a limitation on the highest possible amount given. As mentioned earlier, in Helsinki for a person living alone, that would be 80% of 516 euros. It is almost impossible to find a cheaper rental in Helsinki. This means that almost everyone living alone pays more for the housing than the maximum allowed rent is. Every additional euro has to be fully paid by the tenant, meaning the marginal price for higher quality housing is the same for HA recipients and non-recipients, which means they should have similar behavior in the rental market. If the HA system would pay some percentage of the total rent, let us say 70% of the rent, the recipient would have the incentive to increase spending on housing since they would only pay 30% of the price increase. This system could raise prices. From a theoretical point of view, the current system seems to have the least reason to raise rental prices, as rental housing is already more expensive than the given HA.

If the HA system takes the characteristics of the dwelling into account, it should increase HA recipients' demand for those dwellings, that optimize the amount of HA. As Eerola & Lyytikäinen (2019) state, in competitive equilibrium, this could cause higher rents for eligible units, if the amount of HA recipients is relatively large. There could also be a possibility that HA recipients would move to eligible rentals, leaving unsuitable rentals for non-recipients. The overall effect could leave rent prices the same.

4. Conducted studies on housing allowance effects on rents

Most times, the effects of HA and rental prices are studied by natural experiments. Studying the effects is challenging from an econometric point of view. The causality of rents and HA might go both ways. Rents increase HA, but researchers try to focus on the question does the HA increase rents. This simultaneous dependency makes typical OLS regression difficult to conduct. The researcher needs to select carefully independent variables to make sure they do not correlate with each other. Finding all the relevant explanatory variables is difficult, and the researcher might easily fall into omitted-variable bias as rent prices are determined by multiple factors, of which some also explain the HA. They often try to solve the problem with instrument variables or fixed effects regression.

One effective way to study the effects of HA on rent is to utilize the system attributes, which makes the HA to react independently of rent changes as Eerola & Lyytikäinen (2019) do with the stepwise nature of the general HA. Another option is to focus on changes in the system with differences in differences method as Kangasharju (2010) does. Either way, the results can vary a lot, since the methods, approach, assumptions, and used variables differ a lot. There is no unanimous view among researchers which econometric method would be best for research of HA and rents.

4.1 Foreign studies

In this section, I will focus on some of the most relevant international studies about the causality of HA and rents. The subject is studied in a few developed countries, although the overall number of scientific researches, in this case, is not that wide. Most of them answer to the question if HA recipients pay higher rents than non-recipients or increase their rental expenditure after increases in HA. The institutional setting in each country differs, meaning that the findings in a particular country cannot be interpreted to be fully valid in another country. Still, the results of foreign countries can give us valuable knowledge of the rent effect and HA, which helps us to understand the results of

Finnish studies. As the results below tell, the HA seems to have a positive effect on rent. The size of the impact is often contradicting.

Laferrère & Le Blanc (2004) studies if the rent of HA recipients rises faster than non-recipients in France. They study the impact using reform in 1992-1994, which allowed the HA for households whom it was not granted before. Laferrère & Le Blanc (2004) find that the recipient's rent increases faster than non-recipients. Their analysis focuses on the short-term effect of the reform, and either does not answer the question of overall rent levels. Another French study is by Fack (2006), which uses the same reform as Laferrère & Le Blanc. Fack (2006) also studies the impact on new recipients and finds that one euro of HA increases 50-80 cents in rents. Fack reasons this to be caused by low elasticity of supply.

In the United Kingdom, Gibbons & Manning (2006) studies the effect of HA reforms in 1996 and 1997. In the British system, the HA (Housing Benefit) could pay 100% of the rent. The reform lowered the maximum payable HA for new tenants applying for HA. The older HA recipients' allowance was not reduced. Gibbons & Manning (2006) find that the housing benefit reduces around 10-15%, and rents reduce 6-11%. This could mean that around 2/3 of the HA reduction is paid by the landlords, meaning the majority of the HA profits landlords rather than recipients.

Brewer, Browne, Emmerson, Hood & Joyce (2019) responds to Gibbons & Manning's (2006) study with newer data from 2011-2012 housing benefit reform, where the UK government reduced the generosity of the housing benefit. Brewer et al. (2019) find that, on average, around 90% of HA reduction was paid by the tenants. They find that there is remarkable heterogeneity in the incidence amongst households. Those with relatively high HA for their needs had higher drops in their rents. Brewer et al. (2019) reason that this could be caused by more elastic demand when the consumption goes towards more 'luxurious' housing. They find that families living in 5-bedroom apartments, and single adults tend to downgrade housing after the reform. This way, the study helps understand Gibbons & Manning's (2006) results because Gibbons &

Manning (2006) focuses more on the cuts on the highest level of rents, which causes their results to be contradicting with Brewer et al. (2019).

Hyslop & Rea (2019) study the effect of HA in Auckland, New Zealand. New Zealand's HA (Accommodation Supplement, AS) had a policy change in 2005. The policy changes divided Auckland into two different zones. Zone 1 & Zone 2. Zone 1 consists of the more expensive urban and downtown areas of Auckland and Zone 2 of outer Auckland. This caused the maximum HA to rise 28-45% in the zone 1, depending on the characteristics of the tenants and the dwelling. Hyslop & Rea (2019) study the effects of the policy change effects on rents using regression adjusted difference-in-differences methods. They calculate the differences in boundary areas around the zone borders. They find that, on average, the HA was \$6,81 (NZD) per week higher inside zone 1 boundary than outside. Their regression shows that this caused the inner zone recipients to pay \$2,44 (NZD) higher rent per week. Hyslop & Rea (2019) are not able to explain if the recipients upgraded their housing quality or the landlord's raised the rental levels.

Susin (2003) studies the effect of the US rent voucher system on overall rental prices. The theoretical background in Susin's (2003) study reminds the supply-demand framework, as in figure 4. Susin expects the vouchers to shift the demand curve rightwards, causing higher demand and price. Susin (2003) Finds that the voucher program causes a 16 percent increase in overall rents, which means that those who do not earn the voucher, pay \$8,2 billion (USD) more rent than they would have without the program. This results that the benefit from the voucher system (\$5,8 billion) is smaller than the negative effect of the price rise on low-income households.

Eriksen & Ross (2015) responds to the earlier studies of the voucher system in the US rental market. Eriksen & Ross (2015) find contradicting results to Susin (2002), as they find that an increased number of vouchers does not increase the price of rentals. Eriksen & Ross argue that Susin's (2002) results "may be biased due to unobserved determinants of rent that are correlated with the existing supply of vouchers (Olsen

2003).” (Eriksen & Ross, 2015, p. 155). They conclude that their results estimate the short-term effects of a particular voucher expansion rather than the long-term.

In addition to Susin and Eriksen & Ross, Collinson & Ganong 2018) study the US voucher system. Their study focuses on two separate research designs. One is with raising the rent ceiling equally in all areas, and the other is raising the rent ceiling with higher quality areas and lowering it in lower quality areas. They find that the equal increase in the rent ceiling causes the voucher rents to rise by 46%, with no improvement in quality. In the other situation (or as they call it "tilting the rent ceiling"), they find that voucher recipients tend to move safer and higher quality housing at zero net cost to the government. This implies how critical the design of the HA system is to the impact on rents.

4.2.1. Finnish studies' background and setting

Here I explain the background and the setting of Finnish studies conducted on the subject. The subject is not very commonly studied in Finland, and the following papers represent the most important ones of the small literature conducted. The following papers approach the question of housing allowances and rents from different standpoints and methods.

Kangasharju (2003) is the first one to approach the incidence of housing allowances from the econometric point of view in the Finnish rental market. The purpose of the paper in question is to find if tenants with HA pay higher rent than those without. Kangasharju (2003) argues two different situations. One that HA could cause two different prices in the rental market. If landlords knew which tenants had HA, landlords would be able to ask higher prices from the tenants, hence causing the different market for HA recipients. Kangasharju (2003) admits that this type of situation would be unlikely since the landlords are not able to estimate a tenant's payment source. The second option is that tenants with HA tend to move to better dwellings because the HA system allows them to earn more HA in bigger or newer houses.

Kangasharju's (2003) estimate works in the following way. The logarithmic rental price is the dependent variable, and independent variables are those which explain rent price. If disposable income, household characteristics, and the quality of the dwelling explain rental costs, then the HA dummy coefficient would not have a statistically significant estimate, and the recipients' housing costs would be explained similarly as non-recipients. A significant coefficient with negative value would mean that HA does allow recipients to consume as much housing as non-recipients. A positive coefficient would mean that HA recipients pay a higher price for the same rentals as non-recipients. He uses multiple control variables such as income, household size, living area, construction, or renovating year et cetera.

As for the model, Kangasharju (2003) expects HA not to alter the elasticity of demand, but to shift the demand curve of the recipients rightwards. This means that Kangasharju assumes all HA recipients to react homogeneously to changes in the HA amount.

Kangasharju (2003) utilizes data gained from Statistics Finland (Tilastokeskus) during the years 1993-2000. The data is panel data from Income Distribution Statistics collected by random sampling. The sample consists of 15 607 observations. Kangasharju (2003) uses this data to generate three different estimations. First, with the ordinary least squares method (OLS), secondly, he uses the panel attribute of the data to run a difference-in-differences (DiD) estimation, and thirdly Kangasharju (2003) estimates the data with instrumental variable regression.

Kangasharju (2010) renews his research before with newer data and changes in the HA system in 2002. His research background mostly relies on the same institutional settings and model as Kangasharju (2003). This time Kangasharju (2010) expects the landlords to know which tenants have HA admitted. Kangasharju (2010) argues that in November 2006, 53% of HAs were paid directly to the landlords, and thus, the landlords know which tenants have HA.

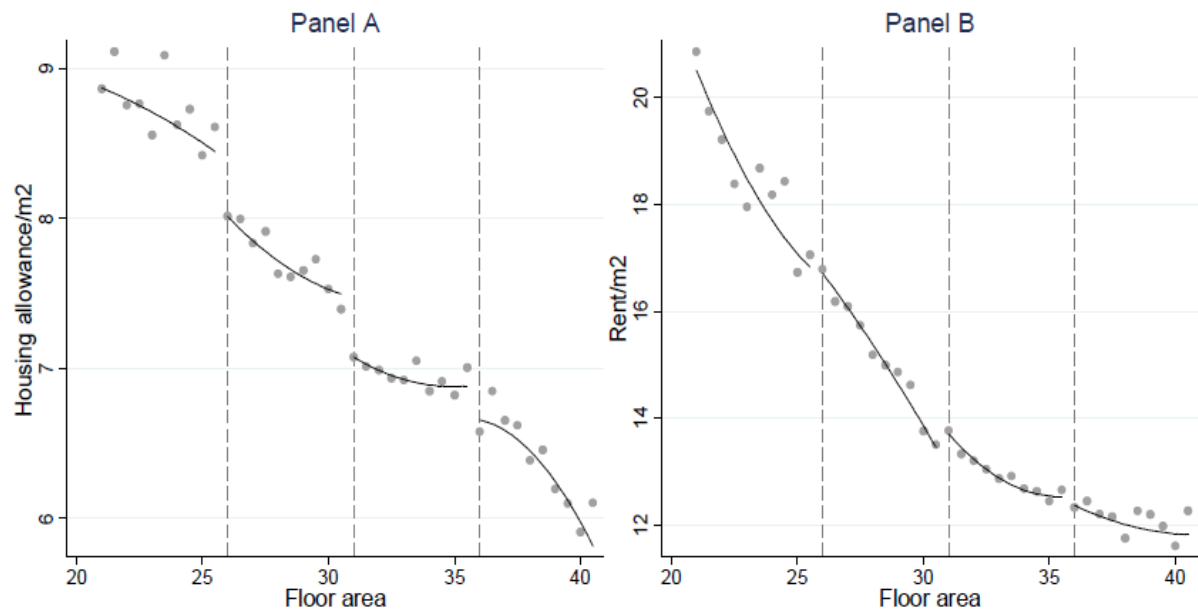
Kangasharju (2010) uses data from households between the years 1994 and 2003. The study mainly focuses on HA program reform in 2002, where the rent ceilings increased, causing an increase in HA for recipients. Kangasharju (2010) first uses OLS regression for the data to estimate the effects of HA on rent during the years 1994-2003. Later he focuses on the reform and estimates the data from 2000 to 2003 with Differences-in-differences estimation, then with Instrumental variables estimation.

Virén (2013) studies the effect of HA on rents from a similar point of view as the theoretical model presented by Susin (2003). Virén uses panel data from KELA, which consists of 50 000 households. The effective number of observations is 140 000. The data consists only of households that received HA and therefore lacks a proper control group. Virén also uses data from income distribution statistics from the years 1989-2008.

Virén (2013) discards Kangasharju's assumption of different prices within the market, depending on the participants' income source. Virén assumes the law of one price to be in effect. This means if the price paid by HA recipients rises, then the overall market price would rise. Virén creates a model in which rental price depends on several control variables. The key variable is the maximum HA coefficient. The estimation then tries to explain how much changes in maximum available HA affects the rental level. Virén also estimates if HA increases demand as in consumed living space

Eerola & Lyytikäinen (2019) approach the question of HAs and rents from the Finnish general HA programs' characteristic point of view. They use data provided by KELA of HA recipients and their dwellings from 2008 to 2013. They argue that the stepwise nature of the general HA system could reveal to us the nature of the price raising effect. They use features of regression discontinuity design (RDD) to research the effect. They can quantify the effect with an IV regression using the discontinues as instruments. The main argument is illustrated in Figure 4.

Figure 5. Panel A: Floor area & monthly HA/m². Panel B: Floor area & monthly rent/m².



Source: Eerola & Lyytikäinen (2019)

The figure shows the stepwise nature of the HA/m². The dots are sample means by 0,5m² floor area bins, and the lines are second-order polynomials fitted for each interval. The vertical lines are the cut-off limits of the compensable rent per square meter. As the floor area increases, the given HA decreases in a stepwise manner. For example, in their sample, on average, a flat with a floor area of 25,5m² has the compensable rent limit as less than 12 euros, as 26m² has a limit of 12.8 euros. This means that the cut-off is around 0,8 euros. Eerola & Lyytikäinen (2019) argue that if HA influences rents, the rent price should have a similar pattern. As the right figure shows, there are no such phenomena in the illustration.

The HA cut-off can be seen exogenous; therefore, it can be used to identify the impact of HA. The method used to identify it is somewhat regression discontinuity design (RDD). To execute this, first, Eerola & Lyytikäinen (2019) visualizes the discontinuities as in figure 4 above. Then they estimate the effect of each cutoff on HA and rent separately. After this, they use the discontinuities as exogenous instruments for HA, with instrumental variables regression.

4.2.2 findings

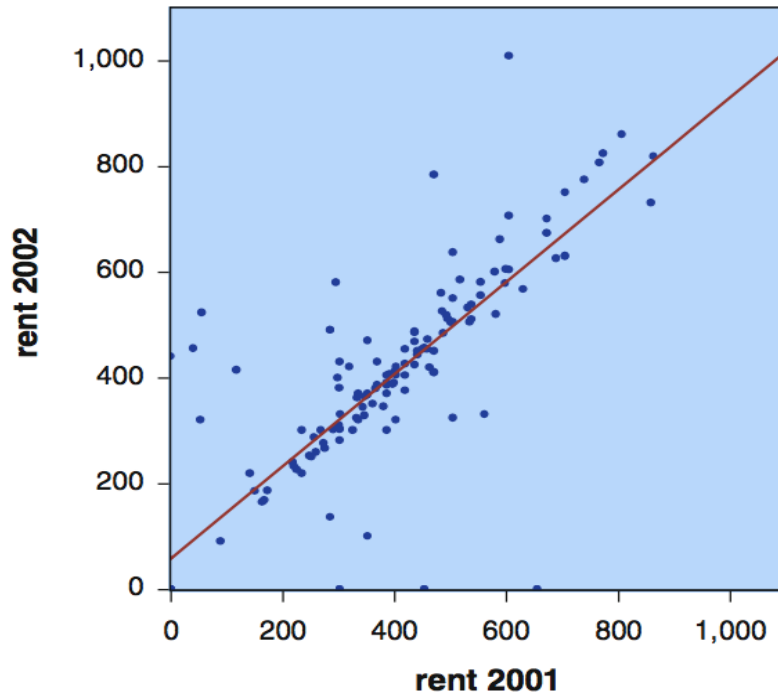
The results are quite contradicting. Kangasharju (2003) finds that HA recipients pay 11,5-12,2% higher rents than non-recipients. Later Kangasharju (2010) reports surprisingly big difference to his previous work, as he finds that one additional euro of HA leads to 60-70 cents higher rent. Virén's (2013) conservative estimate is one-third of a shift to overall rent prices, although it could be up to 50%. Eerola & Lyytikäinen (2019) finds no clear evidence that differences in HA cause changes in market rents.

All of these studies have, to some extent, different assumptions, models, and methods to estimate the effect. Virén (2013) and Kangasharju (2003 & 2010) contradict each other as Virén expects the law of one price to be in effect, and Kangasharju assumes HA recipients to pay higher rent than non-recipients. Virén (2013) argues that the law of one price holds as his estimate shows the same prices for HA recipients and non-recipients. Virén (2013) also notes that Kangasharju (2010) data is dominated by outlier observations, causing the OLS estimation to show biased results. Figure 6. by Virén (2013) visualizes the argument of large outliers.

Although, Kangasharju (2010) and Virén (2013) states that HA has a very high effect on rent prices, the mechanism is different and therefore is not in line with each other. Also, Hiekka & Virén (2008) argue that Kangasharju's (2003) results should be interpreted carefully as using instrumental variable regression is complicated, and his instrumental variables are somewhat inadequate¹.

¹ Kangasharju (2003) uses the age of the youngest child and household's financial situation development dummy as an instrumental variable.

Figure 6. The effect of the reform in 2002 on rents in Kangasharju (2010) estimation sample



Source: Virén (2013)

Eerola & Lyytikäinen (2019) conducts a robustness analysis for their paper and Kangasharju (2010) in their online appendix. Eerola & Lyytikäinen (2019) try to repeat Kangasharju's (2010) results with the same data. Eerola & Lyytikäinen (2019) are not able to find the same programming code as Kangasharju (2010), but they follow the methods described in his paper. For unknown reasons, Eerola & Lyytikäinen end up with a remarkably bigger estimation sample. Eerola & Lyytikäinen finds the results of the estimation to not to be robust and are inconsistent with Kangasharju (2010), but consistent with their paper. Eerola & Lyytikäinen (2019) also discuss on Virén (2013) on their online appendix. They argue that their robustness analysis shows that Virén's control variables lead to biased results, and that the Akaike Information Criterion score does not support the IV regression with first-order polynomials². Eerola & Lyytikäinen argue that their internal validity is higher.

². Virén (2013) controls with first-order terms floor area and construction year. (Viren (2013) controls only the first-order terms floor area and construction year fitted over the whole support of the floor area and construction year distribution.)

5. Conclusion & discussion

This paper is a literature review of the most notable studies on housing allowance and its effects on rents. The paper focuses majorly on the Finnish rental market and housing allowance scheme. The primary sources conclude as follows. Kangasharju (2003) finds the housing allowance recipients to pay 11,5-12,2% higher rent, and later Kangasharju (2010) states that one additional euro of HA leads to 60—70 cents higher rent for the recipient. Virén (2013) results in one-third of HA to shift into overall rent prices. The latest results from Eerola & Lyytikäinen (2019) suggest that HA recipients do not pay remarkably higher rents than non-recipients. International studies' results are as contradictory.

The incidence of housing allowance is a complicated phenomenon to study, which causes the results to depend considerably on the researcher's choices and assumptions. The simultaneous causality of rents and housing allowance causes the effect challenging to study from an econometric standpoint. This makes it essential to consider the results with caution.

As for the conclusion of this paper, the latest results (Eerola & Lyytikäinen 2019) suggest that HA would not have as big of an impact on HA recipients' rental price as earlier studies show. Some recent foreign studies also support this result (Brewer et al. 2019; Eriksen & Ross, 2015). The empirical methods, setting, modeling, and robustness in Eerola & Lyytikäinen (2019) remains the most credible of Finnish' studies. Therefore, I argue that with current knowledge, housing allowance recipients do not pay remarkably higher rent than non-recipients in Finland.

I also argue that the price effect on the overall rent price is not studied well enough to draw specific conclusions. Most likely, as theory and some evidence suggest (Susin 2002. Virén 2013. et cetera), HA increases the overall price as it increases demand in the rental market. The effect might be small as HA is a relatively small part of the entire market. Nevertheless, there is not enough empirical evidence provided to conclude the size of the impact.

As for now, HA seems to succeed in its' purpose. It increases housing consumption for low-income citizens and allows them to spend more on other consumption. Also, the housing allowance has other purposes, such as preventing segregation (Antikainen et al. 2017), which is not studied in this paper. For the increasing rental prices, housing allowance seems not to be the one to blame. One efficient way to lower prices might be to increase housing supply (Antikainen et al. 2017). The current studies leave intriguing questions to ask for future research. An interesting topic would be the heterogeneity of recipients' effect on housing allowance in Finland or the effect of the general HA reform in 2015.

References

- Antikainen, J. Laakso, S. Lönnqvist, H. Pyykkönen, S. Soininvaara, I. (2017) Asuntopolitiikan kehittämiskohteita, *Eduskunnan tarkastusvaliokunnan julkaisu 1/2017*. ISSN 2342-6616 (pdf)
- Brewer, M. Browne, J. Emmerson, C. Hood, A. Joyce, R. (2019). The curious incidence of rent subsidies: Evidence of heterogeneity from administrative data. *Journal of Urban Economics*. doi:10.1016/j.jue.2019.103198
- Collinson, R. and Ganong, P. (2018), How Do Changes In Housing Voucher Design Affect Rent and Neighborhood Quality? *American Economic Journal: Economic Policy* 10, 62–89. doi:10.1257/pol.20150176
- Eerola, E & Lyytikäinen, T. (2019). Housing allowance and rents: Evidence from a stepwise subsidy scheme. doi:10.1111/sjoe.12396
- Eerola, E. Lyytikäinen, T. Saarimaa, T & Öberg, J (2019). Authored by Jauhiainen, S. & Korpela, T. Circumstances, housing and employment of social assistance recipients. *Publications of the Government's analysis, assessment and research activities* 2019:28.
- Eriksen, M, D & Ross, A. (2015). Housing Vouchers and the Price of Rental Housing. *American Economic Journal: Economic Policy*, 7, 154–176. doi:10.1257/pol.20130064
- Fack, G. (2006), Are housing benefits an effective way to redistribute income? Evidence from a natural experiment in France, *Labour Economics* 13, 747–771. doi:10.1016/j.labeco.2006.01.001
- Gibbons, S & Manning, A. (2006). The incidence of UK housing benefit: Evidence from the 1990s reforms. *Journal of public economics*. 90, 799-822. doi:10.1016/j.jpubeco.2005.01.002
- Hiekka, S. ja Virén, M. (2008), Nostaako asumistuki vuokria? *Kansantaloudellinen aikakauskirja* 104(2).
- Hyslop, D, R. & Rea, D. (2019). Does Housing allowances increase rents? Evidence from a discrete policy change. *Journal of Housing Economics*. doi:10.1016/j.jhe.2019.101657
- Jauhiainen S, Sihvonen E, Räsänen T, Veilahti A & Mikkola H. (2019) In support of housing. General housing allowance from the perspective of recipients and landlords and in European comparison. *The Social Insurance Institution of Finland, Studies in social security and health* 155, 125 pp. ISBN 978-952-284-059-2 (pdf).

Kangasharju, A. (2003) Maksako asumituen saaja muita korkeampaa vuokraa? *Government institute for economic research. VATT-research reports*. ISSN 0788-5008

Kangasharju, A. (2010), Housing Allowance and the Rent of Low-income Households, *The Scandinavian Journal of Economics* 112, 595–617.
doi:10.1111/j.1467-9442.2010.01615.x

KELA. (2019A). Pocket statistics. ISSN 1457-8743 (online).

KELA. (2019B). Kelan asumistukitilasto. ISSN 1796-1092.

KELA. (2018) Räsänen, T. Asumistuki on suurimmalle osalle tilapäinen tuki. Kela tutkimusblogi. <https://tutkimusblogi.kela.fi/arkisto/4542>

Laferrière, A & Le Blanc, D. (2004). How do housing allowances affect rents? An empirical analysis of the French case. *Journal of Housing Economics* 13, 36–67.
doi:10.1016/j.jhe.2004.02.001

Oikarinen, E, Peltola, R & Valtonen, E. (2014). Regional variation in the elasticity of supply of housing, and its determinants: The case of a small sparsely populated country. *Aboa Centre for Economics. Discussion Paper No. 91*. ISSN 1796-3133

Soininvaara, O. (2018). Asumistuki asuntopolitiikan välineenä, tarkastelussa erityisesti Helsingin seutu. *Akava Works –report 2/2018* ISBN: 978-952-7281-15-4; pdf

Susin, S. (2002). R. Rent vouchers and the price of low-income housing. *Journal of Public Economics* 83, 109–152. doi:10.1016/S0047-2727(01)00081-0.

Terämä, E, Tiitu, M, Paavola, J-M, Vainio, A, Määttänen, N, Miettinen, Aa, Kontula, O. & Hiilamo H. (2018). Living alone as part of the life course. *Publications of the Government's analysis, assessment and research activities* 66/2018

Tilastokeskus (2018A). Official Statistics of Finland (OSF): General Housing Allowance [e-publication]. Social Insurance Institution of Finland.
http://www.stat.fi/til/astuki/index_en.html

Tilastokeskus (2018B) Official Statistics of Finland (OSF): Rents of dwellings [e-publication]. ISSN=1798-1018. 2018. Statistics Finland
http://www.stat.fi/til/asvu/2018/asvu_2018_2019-03-07_tie_001_en.html

Tilastokeskus (2018C). Official Statistics of Finland (OSF): Families [e-publication]. ISSN=1798-3231. Annual Review 2017, 7. Living alone varies by age. Statistics Finland. http://www.stat.fi/til/perh/2017/02/perh_2017_02_2018-12-05_kat_007_en.html

Tilastokeskus (2017). Official Statistics of Finland (OSF): Dwellings and housing conditions [e-publication]. ISSN=1798-6761. Overview 2017. Helsinki: Statistics Finland. http://www.stat.fi/til/asas/2017/01/asas_2017_01_2018-10-10_tie_002_en.html

UN General Assembly (1948), *Universal Declaration of Human*, 217 A (III)

Virén, M. (2013), Is the housing allowance shifted to rental prices? *Empirical Economics*, 44, 1497–1518. doi:10.1007/s00181-012-0589-x